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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (currently amended) An automated detection algorithm embodied in a computer readable medium, the automated detection algorithm to compute the ring profile of colon like surfaces comprising the steps of:

providing an original image of a colon like surface disposed along a major axis in a scan having vertex points, each vertex point having a discrete point identifier and three dimensional position information;

generating a shrunken version of the colon like surface utilizing neighbors averaging of the three dimensional position information for every vertex point in the original colon view, wherein the shrunken version of the colon like surface has a same number of vertices as the original image of the colon like surface;

modeling the shrunken version of the colon like surface with an ordered set of 3-D points to produce a curve proximate to the major axis of the colon like surface;

isolating segments of vertex points between planes normal to the curve proximate to the major axis of the colon like surface from the shrunken version of the colon like surface;

mapping the isolated segments of vertex points from the shrunken version of the colon like surface back to the original image of the colon like surface to generate a ring profile of the colon like surface.

2. (original) The automated detection algorithm to compute the ring profile of colon like surfaces according to claim 1 comprising the steps of:

decimating the vertex points of the provided original image.

3. (original) The automated detection algorithm to compute the ring profile of colon like surfaces according to claim 1 comprising the steps of:

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computing a centerline of the colon utilizing the ring profile of the colon like surface.

4. (original) The automated detection algorithm to compute the ring profile of colon like surfaces according to claim 3 comprising the steps of:

measuring along the computed centerline of the colon like surface to determine positional information relative to the colon like surface.

5. (previously presented) The automated detection algorithm to compute the ring profile of colon like surfaces according to claim 3 comprising the steps of:

smoothing the computed centerline of the colon.

6. (original) The automated detection algorithm to compute the ring profile of colon like surfaces according to claim 3 comprising the steps of:

utilizing the ring profile along a preselected length of the computed colon centerline to determine the local colon volume and local colon distension along the preselected length of the colon.

7. (previously presented) The automated detection algorithm to compute the ring profile of colon like surfaces according to claim 3 comprising the steps of:

mapping the vertices distance to the computed centerline; and

building an image of vertices distances to centerline to map the colon.

8. (previously presented) The automated detection algorithm to compute the ring profile of colon like surfaces according to claim 3 comprising the steps of:

mapping the vertices distance to the computed centerline to obtain a mapped centerline view of the colon;

rotating the mapped centerline view of the colon to spatially reorient the mapped centerline view of the colon; and

reconstructing a spatially reoriented image of the colon from the rotated centerline view by expanding the vertices distances to map the colon.

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9. (currently amended) An automated detection algorithm embodied in a computer readable medium, the automated detection algorithm to compute the ring profile of colon like surfaces comprising the steps of:

providing an original image of the colon like surfaces disposed along a major axis in a scan having the colon like surface identified by vertex points, each vertex point having a discrete point identifier and three-dimensional positional information;

generating a shrunken image of the colon like surface utilizing neighbors averaging of the three-dimensional positional information for vertex points in the original colon view, wherein the shrunken version of the colon like surface has a same number of vertices as the original image of the colon like surface;

randomly designating a first vertex modeling point at a vertex point along the shrunken colon image;

identifying and marking neighboring vertex points to the randomly selected first vertex modeling point;

designating a second vertex modeling point located at a predetermined distance from the first vertex modeling point;

sequentially repeating the identifying and marking, and designating steps to designate vertex modeling points from the randomly selected first vertex modeling point to an end of the colon;

connecting the designated vertex modeling points to produce a curve proximate to the major axis of the colon like surface;

isolating groups of vertex points between plans normal to the curve from the shrunken image of the colon like surface; and

mapping the isolated groups of vertex points from the shrunken image of the colon like surface back to the original image of the colon like surface to generate a ring profile of the colon like surface.

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10. (currently amended) An automated detection algorithm embodied in a computer readable medium, the automated detection algorithm to compute an approximate centerline profile of colon like surfaces comprising the steps of:

providing an original image of the colon like surfaces disposed along a major axis in a scan having the colon like surface identified by vertex points, each ~~of~~ vertex point having a discrete point identifier and three-dimensional positional information;

generating a shrunken image of the colon like surface utilizing ~~a~~ neighbors averaging of the three-dimensional positional information for vertex points in the original colon view, wherein the shrunken version of the colon like surface has a same number of vertices as the original image of the colon like surface;

randomly designating a first vertex modeling point at a vertex point along the shrunken colon image;

identifying and marking neighboring vertex points to the randomly selected first vertex modeling point;

designating a second vertex modeling point located at a predetermined distance from the first of vertex modeling point;

sequentially repeating the identifying and marking, and designating steps to designate vertex modeling points from the randomly selected first vertex modeling point to an end of the colon; and

connecting the designated vertex modeling points to produce a curve proximate to the major axis of the colon like surface.

11. (currently amended) An automated detection algorithm embodied in a computer readable medium, the automated detection algorithm to compute the ring profile of colon like surfaces comprising the steps of:

providing an original image of the colon like surface disposed along a major axis in a scan having the colon like surface identified by vertex points, each vertex point having a discrete point identifier and three-dimensional positional information;

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generating a shrunken image of the colon like surface utilizing neighbors averaging of the three-dimensional positional information for vertex points in the original colon view, wherein the shrunken version of the colon like surface has a same number of vertices as the original image of the colon like surface;

randomly designating a first vertex modeling point at a vertex point along the shrunken colon image;

identifying and marking neighboring vertex points to the randomly selected first vertex modeling point;

designating a second vertex modeling point located at a predetermined distance from the first vertex modeling point;

sequentially repeating the identifying and marking, and designating steps to designate vertex modeling points from the randomly selected first vertex modeling point to an end of the colon; and

connecting the designated vertex modeling points to produce a curve proximate to the major axis of the colon like surface.

12. (previously presented) An automated detection algorithm according to Claim 11, comprising the steps of:

isolating groups of vertex points between planes normal to the curve from the shrunken image of the colon like surface; and

mapping the isolated groups of a vertex points from the shrunken image of the colon like surface back to the original image of the colon like surface to generate a ring profile of the colon like surface.

13. (previously presented) The automated detection algorithm to compute the ring profile of colon like surfaces according to claim 3, wherein computing a centerline of the colon utilizing the ring profile of the colon like surface comprises determining the center point of a bounding box associated with the ring profile, wherein the centerline includes the center point of the bounding box.

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14. (previously presented) The automated detection algorithm to compute the ring profile of colon like surfaces according to claim 1, wherein the shrunken version of the colon like surface is associated with a smaller bounding box than the original image of the colon like surface.

15. (new) The automated detection algorithm to compute the ring profile of colon like surfaces according to claim 1 wherein the shrunken version of the colon like surface has substantially less volume than the original image of the colon like surface.

16. (new) The automated detection algorithm to compute the ring profile of colon like surfaces according to claim 1 wherein generating a shrunken version of the colon like surface utilizing neighbors averaging of the three dimensional position information for every vertex point in the original colon view includes iteratively averaging the three dimensional positional information.

17. (new) A computer readable medium comprising code executable on a processor, the computer readable medium comprising:

code for providing a colon-like surface having original points, wherein each original point has original coordinates comprising a first coordinate, a second coordinate and a third coordinate;

code for generating a set of revised points by iteratively averaging each of the coordinates of adjacent points connected to each original point,

wherein a first iteration sums the first coordinate of adjacent points and divides by a number of adjacent points to generate a revised first coordinate, sums the second coordinate of adjacent points and divides by the number of adjacent points to generate a revised second coordinate, and sums the third coordinate of adjacent points and divides by the number of adjacent points to generate a revised third coordinate,

wherein subsequent iterations sum a previously revised first coordinate of adjacent points and divides by the number of adjacent points to generate a newly revised first coordinate, sums the previously revised second coordinate of adjacent points and divides by the

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number of adjacent points to generate a newly revised second coordinate, and sums the previously revised third coordinate of adjacent points and divides by the number of adjacent points to generate a newly revised third coordinate; and

code for generating a reduced volume representation of the colon-like surface by compiling the revised points.

18.　(new)　The computer readable medium of claim 17 wherein the reduced volume representation has a volume that is substantially less than a volume of the colon-like surface.

19.　(new)　The computer readable medium of claim 17 further comprising:

code for extracting a set of revised points from the reduced volume representation;

code for interpolating a curve from the set of revised points;

code for generating a set of equally distanced planes perpendicular to the curve;

code for dividing the reduced volume representation into segments using the equally distanced planes;

code for generating ring-like sections of the colon-like surface by mapping the revised points in each of the segments to the original points of the colon-like surface; and

code for computing a centerline of the colon utilizing the ring-like sections of the colon-like surface.

20.　(new)　The computer readable medium of claim 19 wherein computing the centerline of the colon utilizing the ring-like sections of the colon-like surface comprises:

code for generating bounding boxes enclosing each of the ring-like sections;

code for determining center points of the bounding boxes; and

code for generating the centerline by connecting the center points.

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21.   (new) The computer readable medium of claim 19 wherein code for extracting the set of revised points from the reduced volume representation comprises:

code for selecting a first point near an end of the reduced volume representation;

code for selecting a second point at a preselected distance from the first point on the reduced volume representation;

code for defining a vector from the first point to the second point;

code for determining a subsequent point on the reduced volume representation at the preselected distance from the second point using the vector;

code for defining a subsequent vector from the second point to the subsequent point;

code for determining another subsequent point on the reduced volume representation at the preselected distance from the subsequent point using the subsequent vector; and

code for determining remaining points of the set of points by repeating the defining the subsequent vector and determining another subsequent point steps.